

The Network Switching Server is a fully integrated voice and data controller based on Internet Protocol (IP) architecture. It manages the routing of voice and data messages to mobile subscribers. A high-availability configuration is supported to meet the continuous network operations requirements as demanded by public safety agencies.



Product Overview

The Network Switching Server (NSS) is a fully integrated voice and data controller at the heart of an OpenSky/NetworkFirst/P25^{IP} packet-switched network. Deployed in a Network Switching Center (NSC), it performs routing functions for digital trunked voice and packet data messages through an Internet Protocol (IP) backbone. The NSS assures that voice and data messages are delivered only to those radio sites necessary to reach the destined mobile subscribers.

The highly scalable design of the NSS allows IP networks of various sizes to be supported. One NSS can be used to support a single-region network serving the communication needs of city or county agencies, while multiple NSSs can be connected to support a multi-region network accommodating voice and data traffic capacity demanded by statewide or even nationwide organizations. In both cases, the high-performance SunTM server in which the NSS is implemented is easily expandable to support future growth.

Support for Packet Data Communication

The NSS employs widely used IP protocols to ease integration with mobile application software readily available off the shelf. The robust design of the NSS allows it to effectively support both long message transfers and shorter status or Global Positioning System (GPS) messages. The Advanced Encryption Standard (AES) is optionally supported to add security to data communication should the need arise.

Support for Digital Trunked Voice Communication

The NSS manages voice traffic on the network. It dynamically tracks the radio site location of voice group members in order to deliver voice calls efficiently.

The NSS provisions OpenSky radios with user-specific voice operation personalities after the user sign-on is authenticated, allowing radios to be shared among different users. Supervisor override and emergency call are supported,

permitting higher priority calls to pre-empt lower priority ones.

The NSS is also engineered to support a wide range of interfaces for third-party products, including dispatch consoles and logging recorders.

High-Availability Option

To meet the continuous network operations requirements of public safety applications, each Network Switching Center (NSC) can be optionally equipped with fully redundant NSS hardware and software operating in a high-availability configuration. In an unlikely event where the primary NSS or other primary network equipment in the Network Switching Center fails, the High-Availability Application will enable the backup NSS to take over network operation.

For More Information

For more information about this or any other M/A-COM Wireless Systems product, call toll free in the U.S. 1-800-368-3277. From outside the U.S. call 1-434-455-9223 (Asia Pacific), 1-434-455-9229 (Latin America and Middle East), and 1-434-455-9219 (Europe).

OpenSky

M/A-COM's OpenSky Wireless Private Network is a fully interoperable digital trunked communications network for public safety, utility, federal, transit, and industrial markets. OpenSky is a complete end-to-end Voice over Internet Protocol (VoIP) solution and employs packet technology to provide integrated voice and data. The OpenSky radio network is the only private land mobile radio communications system that provides clean integration of data messaging with trunked digital voice on the same RF channel. Integrated voice and data over Time Division Multiple Access (TDMA) allows users to perform multiple communication functions at the same time on one radio. The use of TDMA doubles call capacity by allowing two simultaneous voice calls per 25 kHz channel.

NetworkFirst

Public safety communications in today's world faces unprecedented challenges. More than ever, Homeland Security and Situation Readiness depend heavily on effective communication among federal, state, county, and local agencies. M/A-COM's NetworkFirst answers the call for an emergency communications network that provides local, regional, state, and even nationwide connectivity. NetworkFirst uses cost-effective Internet Protocol (IP) packet switched technologies to provide a fast, cost-effective means of achieving multi-agency interoperability, regardless of radio type, frequency, or mode. NetworkFirst creates the most technologically advanced permanent communications network available in the industry today, providing a technology backbone that is extremely flexible, allowing communications requirements to expand – without a wholesale system changeout.

P25^{IP}

M/A-COM's P25^{IP} (P25 to the power of IP) is the first completely Internet Protocol (IP)-based mobile radio communications system developed for users requiring the secure digital voice and data capabilities of Project 25 (P25). P25^{IP} is part of a portfolio of solutions that M/A-COM offers for wide-area communication systems – each of which is capable of meeting the communications requirements of public safety, public service and first responders. Within the M/A-COM portfolio, the P25^{IP} network provides an excellent fit for those agencies which have lower user densities (few users covering larger geographic areas) but still require feature-rich secure voice and data communications. P25^{IP} is also particularly appropriate for users operating with non-exclusive VHF and UHF frequencies. For federal users, P25^{IP} meets the Congressional and NTIA mandates for the narrowband (12.5 kHz) migration.

General Specifications

Dimensions (Chassis) (H x W x D):

3.4 x 16.73 x 25 in. (87.66 x 425 x 635 mm)

Shipping Weight (approximate):

41.8 lb (19 kg) fully configured

49.31 lb (49.31 kg) with rackmount rails and cable management arm

Hardware

System:

One or two (for high availability) Sun Fire™ V240 servers, each with two 1.5-GHz UltraSPARC® IIIi processors

Memory per server:

2 GB, with 8 GB maximum

Available Disk per server:

Internal 73-GB 10000-RPM disk

Peripherals per server:

Four 10/100/1000-BaseT Ethernet ports, DVD-ROM, XVR-100 graphics card, 17-in. flat CRT or 19-in. LCD color monitor

Software

Third-Party:

Sun Solaris™ 9 Operating Environment, Sybase Adaptive Server 12.5.1

OpenSky:

Data application software

Voice application software

High-Availability application software

Environmental

AC Power:

90-264 VAC, 47-63 Hz

Maximum DC Output:

400 Watts

Operating Environment:

+41 to +104°F (+5 to +40°C), 10 to 90% relative humidity, noncondensing

Nonoperating Environment:

-40 to +149°F (-40 to +65°C), 5 to 95% relative humidity

Regulatory Data

Meets or exceeds the following specifications:

Safety:

IEC60950, UL/CSA60950, EN60950

RFI/EMI:

FCC Class A, Part 15 47 CFR, EN55022, CISPR 22

Immunity:

EN55024

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